Abstract

THE FUTURE OF CANCER CONTROL

Robert Hoover*†

Abstract—**A common, overly simplistic, but useful model of disease control incorporates the concepts of primary prevention, early detection, treatment, and rehabilitation. Control over categories of diseases is usually achieved by the complementary and often overlapping implementation of effective interventions in each of these areas. While such interventions can be and have been discovered through empiricism or good fortune, the pace at which such discoveries are made is directly related to the level of understanding of the mechanisms of disease causation. The most illustrative example of this is in the area of infectious diseases. Some effective preventions and treatments were developed over several millennia, but true control was only rapidly and effectively achieved in the past 150 y following the establishment of the microbial nature of these diseases and the resultant unraveling of their presence and mechanisms of action. Currently, there is high enthusiasm that the revolution in genetic and molecular science and technology within the last 15 y has brought us to the analogous point for cancer, and that breakthroughs in prevention, early detection, and treatment will dominate the next several decades, leading to truly effective cancer control early in the 21st century. NCI and private sector initiatives in research and development have clearly shifted to pervasive incorporation of molecular science into identification of cancer causes, host susceptibility, early markers, and selective therapeutics. While the promise of unprecedented progress is high, the difficulties in achieving this are many and daunting, and largely underappreciated. Examples of both the promise and the difficulties of these new approaches are beginning to appear, often simultaneously within the same issue. Effective meeting of the challenges and mining of the opportunities is likely to require new research paradigms and infrastructures focused in these areas.**

Health Phys. 80(4):362; 2001

Key words: National Council on Radiation Protection and Measurements; cancer; health effects; patient protection

* National Cancer Institute, 6120 Executive Boulevard, MSC 7242, Bethesda, MD 20892-7335.

† Full manuscript not available at the time of publication.

For correspondence or reprints contact R. Hoover at the above address.

(*Manuscript received* 28 *August* 2000, *accepted* 27 *December* 2000)

0017-9078/01/0